

Table S1. Compounds altered in concentration (minimum two log-fold change; $P<0.05$) in corn roots infected with *Metarhizium* species compared to uninoculated corn roots (n=3 biological replicates)

Ionization mode	Mass	Log fold change		Log fold change		Identification
		<i>M.b.^a</i> vs Control	<i>M.b.</i> vs Control	<i>M.f.^b</i> vs Control	<i>M.f.</i> vs Control	
negative	60.0232	15.9	up	14.9	up	unknown
negative	103.0661	19.8	up	17.7	up	γ-aminobutyric acid (GABA)
negative	114.0345	18.9	up	18.4	up	4-hydroxy-5-methyl-3(2H)-furanone
negative	138.0404	-18.6	down	-1.2	unchanged	ambiguous - salicylic acid or 4-Nitroaniline or 2-aminonicotinic acid
negative	150.0578	16.7	up	17.0	up	unknown
negative	155.0729	20.7	up	20.3	up	histidine
negative	166.0514	-2.3	down	-0.1	unchanged	unknown
negative	166.0514	17.2	up	0.0	unchanged	unknown
negative	177.0559	17.8	up	17.7	up	unknown
negative	180.0287	17.6	up	18.6	up	unknown
negative	181.0724	20.6	up	0.0	unchanged	tyrosine
negative	188.0852	13.4	up	16.4	up	unknown
negative	194.0447	16.1	up	0.0	unchanged	7-carboxy-7-deazaguanine
negative	199.1034	16.4	up	15.8	up	unknown
negative	201.0675	14.9	up	15.3	up	unknown
negative	205.0578	4.0	up	3.0	up	unknown
negative	208.0941	14.3	up	15.8	up	dambonitol
negative	215.0779	17.2	up	18.1	up	succinyl proline
negative	239.0793	15.4	up	0.0	unchanged	unknown
negative	240.0874	19.4	up	19.4	up	unknown
negative	244.0654	3.4	up	3.1	up	unknown
negative	250.0988	5.3	up	4.6	up	(3S,6S)-3-(4-Hydroxybenzyl)-6-(hydroxymethyl)-2,5-piperazinedione

negative	254.0653	15.0	up	0.0	unchanged	unknown
negative	266.1074	17.0	up	15.7	up	unknown
negative	272.0684	18.6	up	0.0	unchanged	unknown
negative	272.1166	17.4	up	15.8	up	unknown
negative	279.1368	21.6	up	19.8	up	N-(1-deoxy-1-fructosyl)leucine
negative	306.0063	16.6	up	15.8	up	unknown
negative	310.1848	19.3	up	0.0	unchanged	potential botrydial
negative	317.1282	15.2	up	0.0	unchanged	unknown
negative	326.1942	5.6	up	4.1	up	heptaethylene glycol or 2-dodecylbenzenesulfonic acid
negative	354.1038	-20.5	down	-20.5	down	asarinin
negative	358.0975	16.3	up	16.3	up	unknown
negative	368.1164	15.0	up	14.2	up	3-O-feruloyl-D-quinic acid (O-feruloylquinic)
negative	388.1620	4.8	up	-18.2	down	unknown
negative	411.0667	16.3	up	0.0	unchanged	unknown
negative	482.1381	18.2	up	0.0	unchanged	unknown
negative	490.2749	2.4	up	0.0	down	unknown
negative	502.3154	-14.2	down	-14.2	down	unknown
negative	596.2847	23.7	up	23.9	up	unknown
negative	688.4750	21.7	up	18.3	up	unknown
negative	734.4921	3.3	up	-1.6	unchanged	unknown
negative	746.5172	2.9	up	2.2	up	unknown
negative	810.6056	14.3	up	0.0	unchanged	unknown
negative	812.6355	18.8	up	16.9	up	unknown
negative	856.5146	4.9	up	4.0	up	unknown
positive	124.0640	13.9	up	15.1	up	2-methoxy-3-methylpyrazine
positive	131.0945	20.6	up	19.7	up	leucine/isoleucine
positive	131.1307	15.9	up	14.8	up	unknown
positive	143.0945	20.2	up	17.6	up	stachydrine
positive	173.1049	19.1	up	18.2	up	N-acetyl-L-leucine
positive	216.1108	17.5	up	17.7	up	tert-butyl 3-amino-1-methyl-2,3-dioxopropylcarbamate
positive	255.0745	-17.8	down	-17.8	down	D-ribosylnicotinate

positive	276.0989	0.0	unchanged	15.2	up	Glu-Glu
positive	283.1210	-1.4	unchanged	-16.6	down	ambiguous: ceramide or n-trans-p-coumaroyl tyramine
positive	308.2238	-1.5	unchanged	-17.8	down	7-(1-ethoxyethoxy)-4,10-dimethyl-3,5,9,11-tetraoxatridecane
positive	311.1219	14.8	up	15.2	up	N,N-dimethylguanosine
positive	345.1224	0.0	unchanged	15.5	up	unknown
positive	349.3177	14.7	up	0.0	unchanged	unknown
positive	352.1310	-13.7	down	0.3	unchanged	1-(alpha-D-glucopyranosyluronosyl)-3-[(2S)-1-methyl-5-oxo-2-pyrrolidinyl]pyridinium?
positive	401.3491	1.8	unchanged	-14.0	down	unknown
positive	422.1051	15.9	up	17.2	up	potential tetracenomycin A2
positive	511.0720	25102.9	up	16.7	up	unknown
positive	533.4801	36944.1	up	2.6	up	unknown
positive	577.3516	262910.0	up	19.5	up	unknown
positive	603.2449	201676.2	up	0.0	unchanged	unknown
positive	911.6445	1.6	unchanged	-14.5	down	unknown

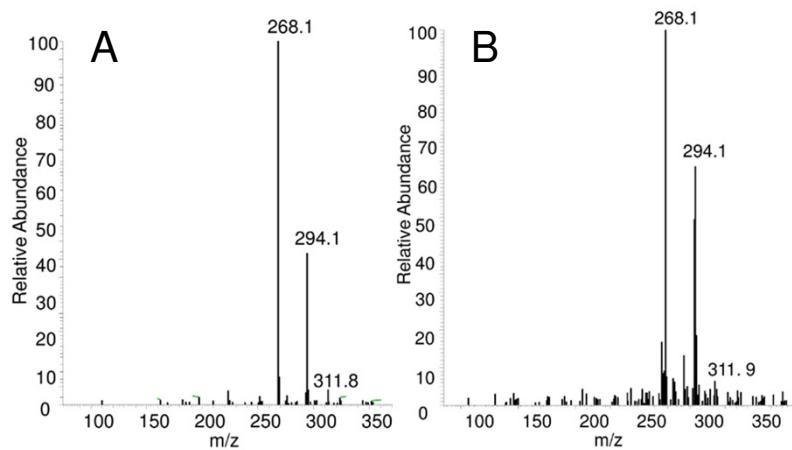


Fig S1. MS fragmentation patterns lysergic acid α -hydroxyethylamide (LAH) from *Periglandula spp.*-infected *Ipomoea leptophylla* (A) compared to *M. brunneum* ARSEF 9354 (B). Low-resolution data were collected on a Thermo Finnigan LCQ Deca XP plus mass spectrometer.

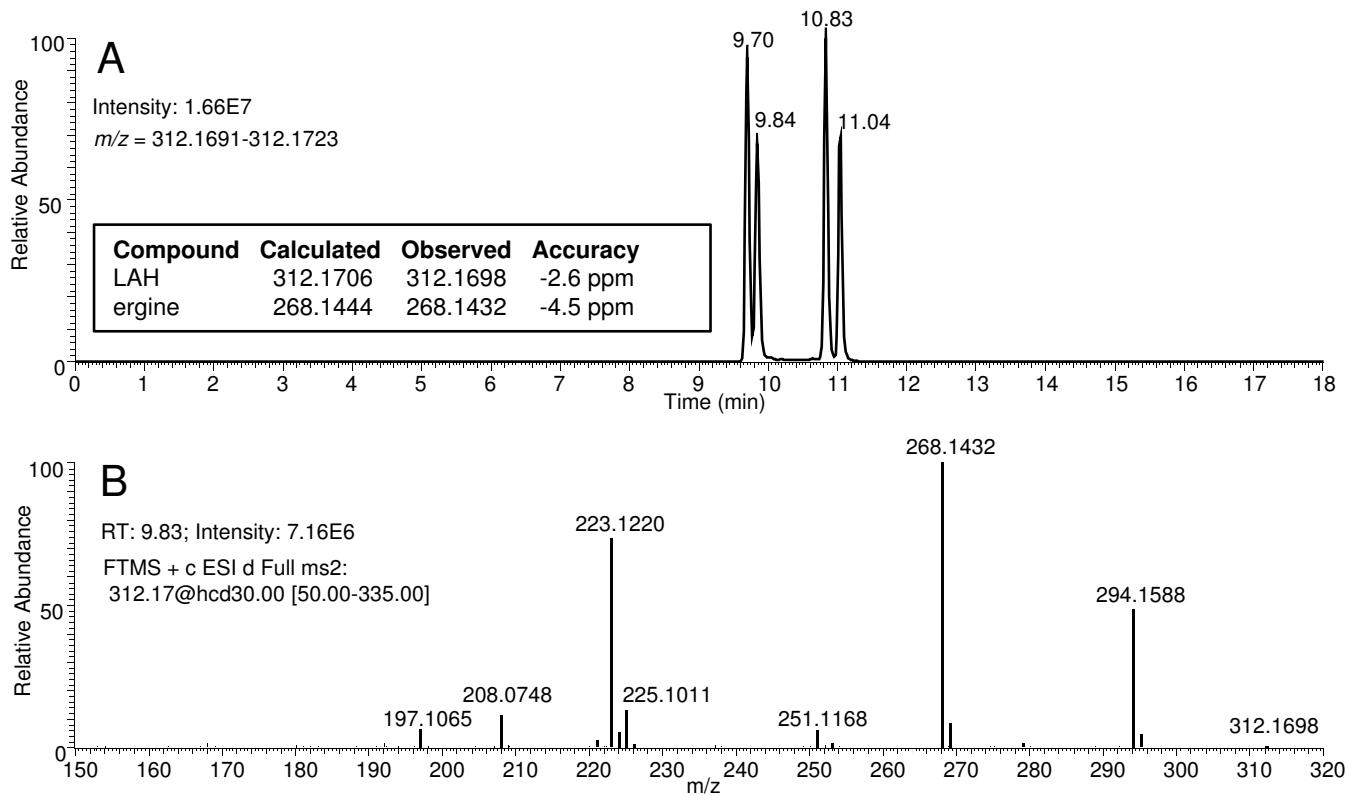


FIG S2. High-resolution mass spectrometry analysis of LAH from *M. brunneum* ARSEF 9354. Extracted ion chromatogram (A) and fragmentation yielding ion with accurate mass corresponding to [ergine+H]⁺ (m/z 268.14325) and additional fragments typical of LAH.

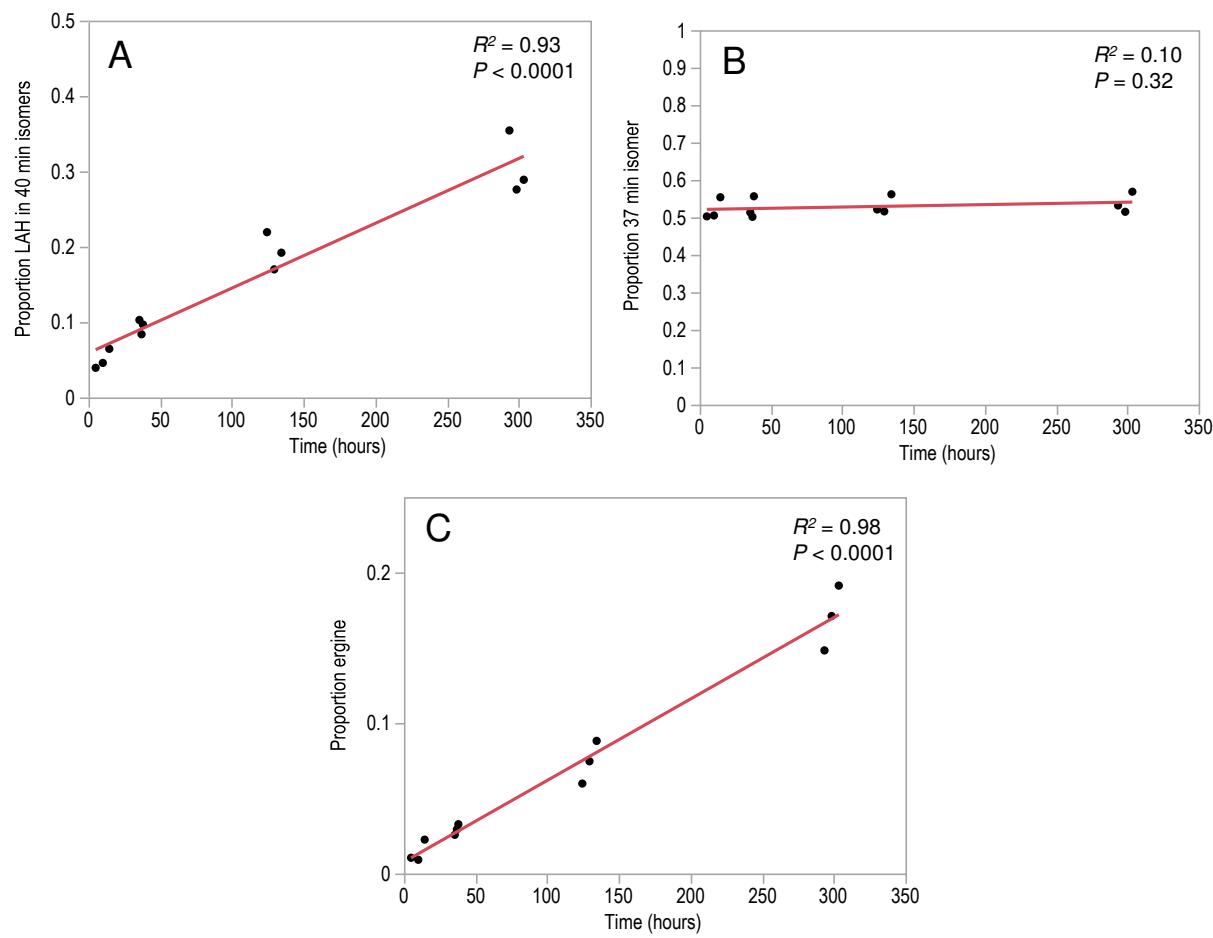


FIG S3. Isomerization and hydrolysis of LAH over time in methanol extracts. (A) Isomerization of 37-min + 38-min peaks to 42-min + 43-min peaks over time, as measured by (area in 42-min + 43-min peaks)/(area in all four peaks). (b) Lack of isomerization between 37-min peak and 38-min peak, measured at area of 37-min peak/(area of 37-min + 38-min peaks). (C) Accumulation of ergine measured as area of ergine isomers/(area ergine isomers + LAH isomers).

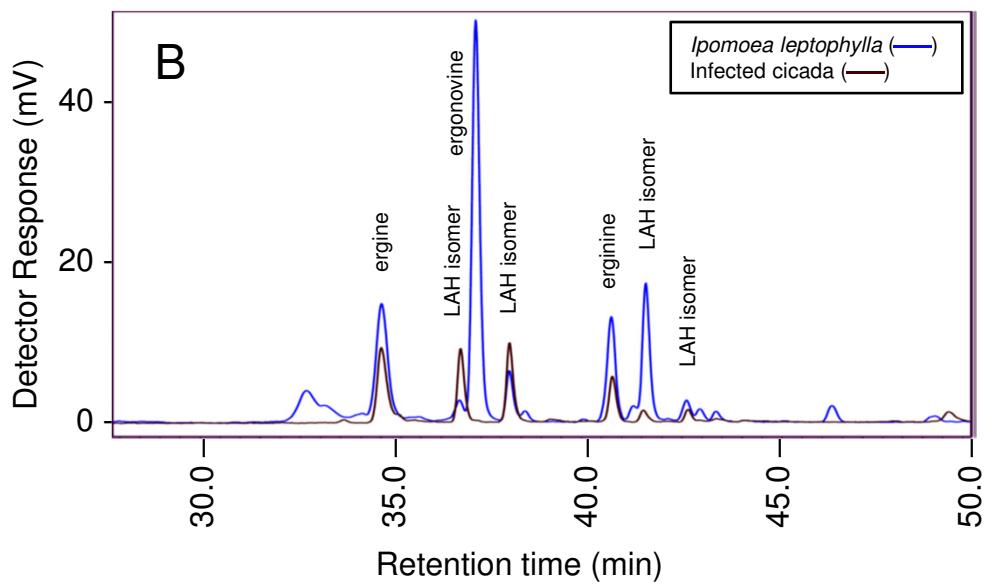


FIG S4. (A) Cicadas (*Magicicada* species) infected with *Metarhizium* species (Photograph by John Plischke); (B) Accumulation of ergot alkaloids in cicada naturally infected with *Metarhizium* species. Time period between infected and alkaloid extraction undetermined.

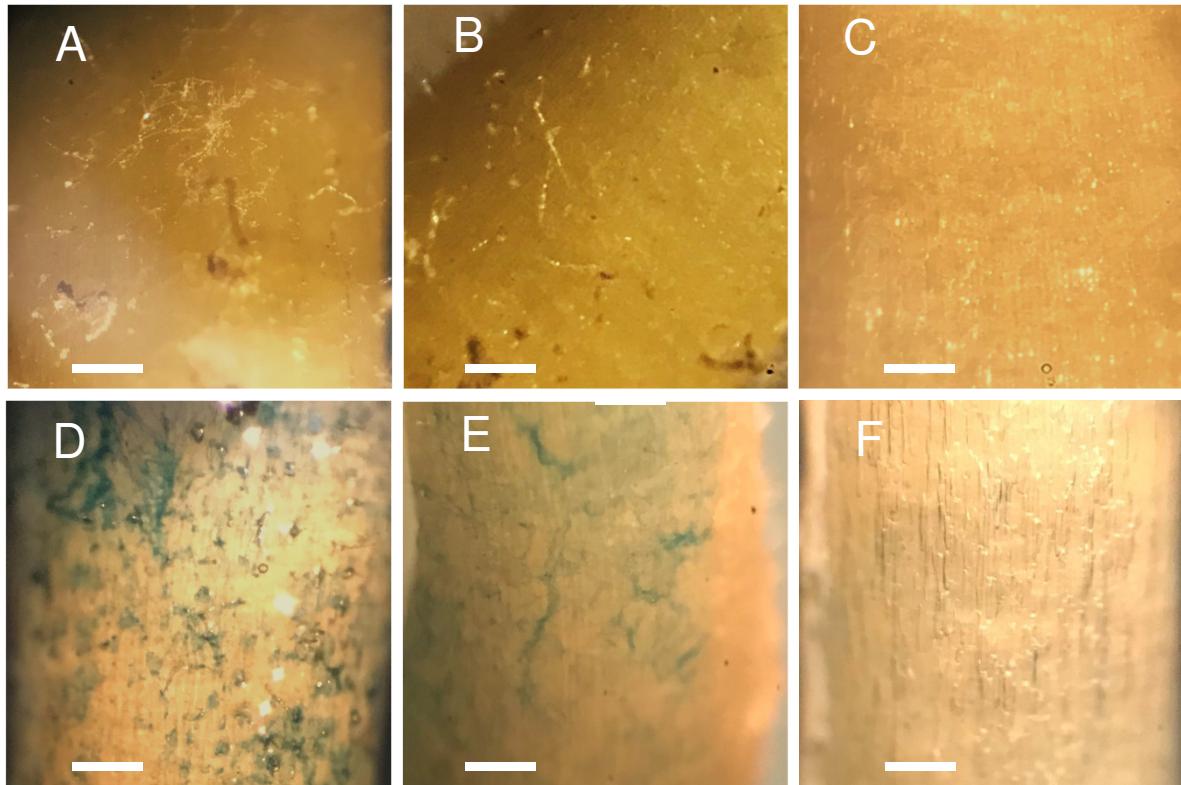


FIG S5. Roots of corn seedlings inoculated with *M. brunneum* ARSEF 9354 (A, D) or *M. flavoviride* BC 1163 (B, E) compared to an uninoculated root (C, F). Roots in panels D, E, and F were stained with cotton blue prior to photography. Photographs were taken four days post inoculation. Scale bar corresponds to 0.5 mm.